PERDAMAN
INDUSTRIES
CHEMICALS & FERTILISERS

Flora Management Plan

Perdaman Urea Project

Burrup Peninsula, Western Australia

CW1055600

Prepared for Proponent:

Perdaman Chemicals and Fertilisers Pty Ltd.

ABN: 31 121 263 741

Date: 19 March 2020

Assessment No:

2184 (WA)

2018/8383 (Commonwealth)

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Summary

Proposal Title	Perdaman Urea Project
Proponent name	Perdaman Chemicals and Fertilisers Pty Ltd.
Assessment Number	2184 (WA) & 2018/8383 (Commonwealth)
Purpose of the FMP	The purpose of this FMP is to provide a framework which describes how the project will address, manage, monitor and mitigate impacts on native flora. This plan supplements the CW1055600-EN-PL-001 Project Environmental Management Plan (PEMP) and Sub-Plans CW1055600-EN-PL-005 Threatened Species Management Plan (TSMP) and CW1055600-EN-PL-006 Fauna Management Plan (FaMP). The FMP has the following objectives: • Identify the conservation significant flora species known to be present in the study area; • Map the conservation significant flora species known to be present in the Project area; • Prescribe mitigation measures to minimise environmental impacts on native vegetation for life of Project; • Establish responsibility, reporting and compliance guidelines.
Key environmental factors and objectives	The key environmental factors and objectives relevant to the Project include: ▪ Coastal processes - To maintain the geophysical processes that shape coastal morphology so that the environmental values of the coast are protected. ▪ Marine environmental quality - To maintain the quality of water, sediment and biota so that environmental values are protected. ▪ Marine fauna - To protect marine fauna so that biological diversity and ecological integrity are maintained. ▪ Flora and vegetation - To protect flora and vegetation so that biological diversity and ecological integrity are maintained. ▪ Terrestrial fauna - To protect terrestrial fauna so that biological diversity and ecological integrity are maintained. Ecological integrity is the composition, structure, function and processes of ecosystems, and the natural range of variation of these elements. ▪ Inland waters - To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.
Condition clauses	To be determined.
Key provisions in the plan	The FMP's key provisions are included in *Section 6 Management and Mitigation Measures.* This section details the outcome and management based actions, that will be applied for the life of the Project.

Foreword

This Flora Management Plan (FMP) is a sub-plan of the overarching Project Environmental Management Plan (PEMP) for the Perdaman Urea Project. An overview of the structure of the PEMP and sub-plans is illustrated in Figure 0-1.

This plan shall be reviewed and updated as necessary throughout the construction, operation and decommissioning phases of the project. The review process is detailed in *Section 15 Review and Continual Improvement* of the PEMP.

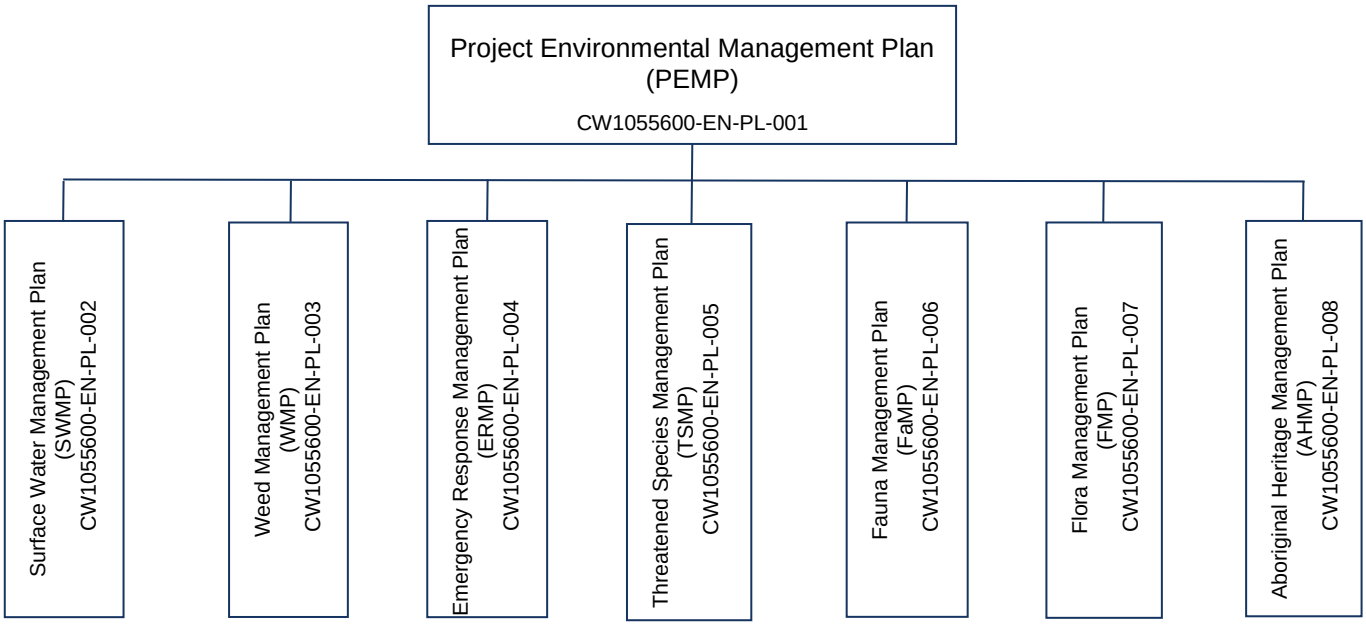

Figure 0-1: Structure of the Project Environmental Management Plan and supporting sub-plans.

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1 Introduction

Perdaman Chemicals and Fertilisers Pty Ltd (Perdaman) proposes to establish a state-of-the-art urea production plant within the Burrup Strategic Industrial Area (BSIA). The site is situated approximately 8 km from Dampier and 20 km north-west of Karratha on the north-west coast of Western Australia.

The main potential flora impacts on the Project include clearing of native vegetation and impacts on significant flora species, introduction and spread of weeds, dust deposition, hydrological changes and altered fire regimes. A suite of strategies will be implemented throughout the construction and operational phases of the project to minimise or abate these impacts. These strategies are the provisions which form this Flora Management Plan's (FMP) legal requirements which will be adhered to across all Project sites.

1.1 Purpose

The purpose of this FMP plan is to provide a framework which describes how the project will address, manage, monitor and mitigate impacts on native flora. This plan supplements the CW1055600-EN-PL-001 Project Environmental Management Plan (PEMP) and Sub-Plans: CW1055600-EN-PL-005 Threatened Species Management Plan (TSMP) and CW1055600-EN-PL-006 Fauna Management Plan (FaMP).

The FMP has the following objectives:

- Identify the conservation significant flora species known to be present in the study area;
- Map the location of the conservation significant flora species known to be present in the Project area;
- Prescribe mitigation measures to minimise environmental impacts on native vegetation for life of Project;
- Establish responsibility, reporting and compliance guidelines.

1.2 Scope

This plan applies to all Project sites during the construction and operational phases. This includes, but is not limited to, Works at Site C, Site F, the causeway, the conveyor corridor, Port side storage, transfer and ship loading areas.

This document will be periodically updated as new approvals are received and compliance requirements are determined.

The scope of this FMP does not include the construction of port facilities such as the jetty or infill of the coastal area for the provision of a wharf. These Works are to be managed by the Pilbara Port Authority (PPA).

1.3 Responsibility

The responsibility for flora management and compliance with this plan sits primarily with Perdaman.

It is the responsibility of Project Personnel to understand their scope of works and how flora management applies to their activities.

2 Project Overview

Perdaman plans to construct and operate a state-of-the-art urea plant with a production capacity of approximately 2 million tonnes per annum (Mtpa) on the Burrup Peninsula in the North West of Australia (Figure 2-1) (the Project).

The Project infrastructure including the main production facility (urea plant), administration, maintenance and storage infrastructure, conveyor and port storage and shiploading facilities are situated within the Burrup Strategic Industrial Area (Burrup SIA). The estate's close proximity to gas, port and other key infrastructure makes it an ideal location for the Project.

The Burrup SIA is located in close proximity to the Murujuga National Park which covers an area of 4,913 ha on the Burrup Peninsula. The area is considered to host the largest concentration of ancient rock art in the world. As such, the Project will apply effective management strategies that minimise or abate, actual or potential impacts on the environment, heritage and cultural values of the region.

The Project involves piping natural gas from the nearby Woodside operated LNG facility to the project site under a long term commercial off-take agreement. Natural gas is converted to urea and the final granulated product is transported by conveyor to the Dampier Port by closed conveyor along the East West Service route, where new facilities will include an enclosed stockpile shed and ship loading facilities.

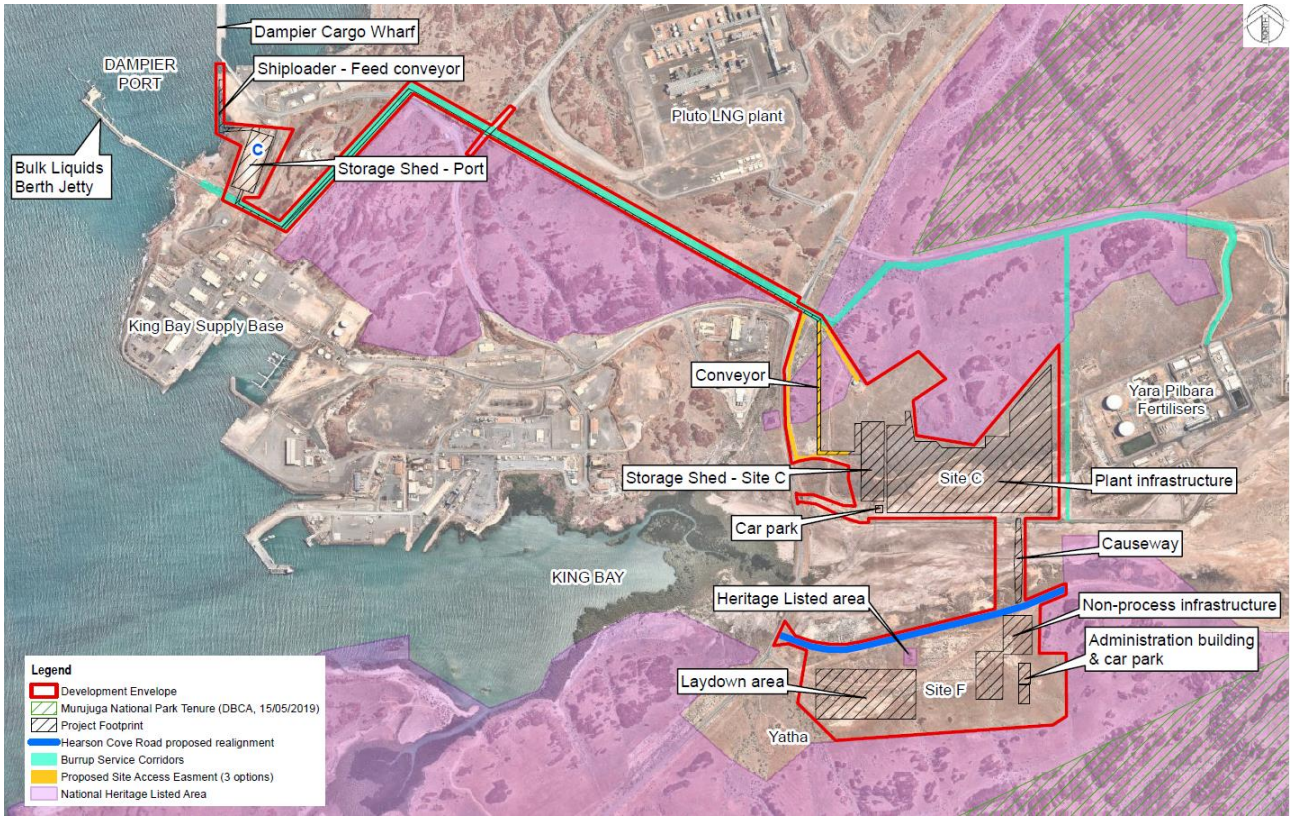

Figure 2-1 Project site layout and adjoining facilities.

Proven Urea production technology underpins each of the key stages of this project. The technologies being applied to the plant are equivalent to the industry best for the specific applications and successfully operate elsewhere in the world. The processing plant can be broadly considered in four sections, or Blocks, namely:

- Gas Block
- Product Block
- Utility Block
- Infrastructure and Logistics

Each of the Process Blocks is made up of a number of process units or physical sections of the plant. The major process sections are described in Figure 2-2.

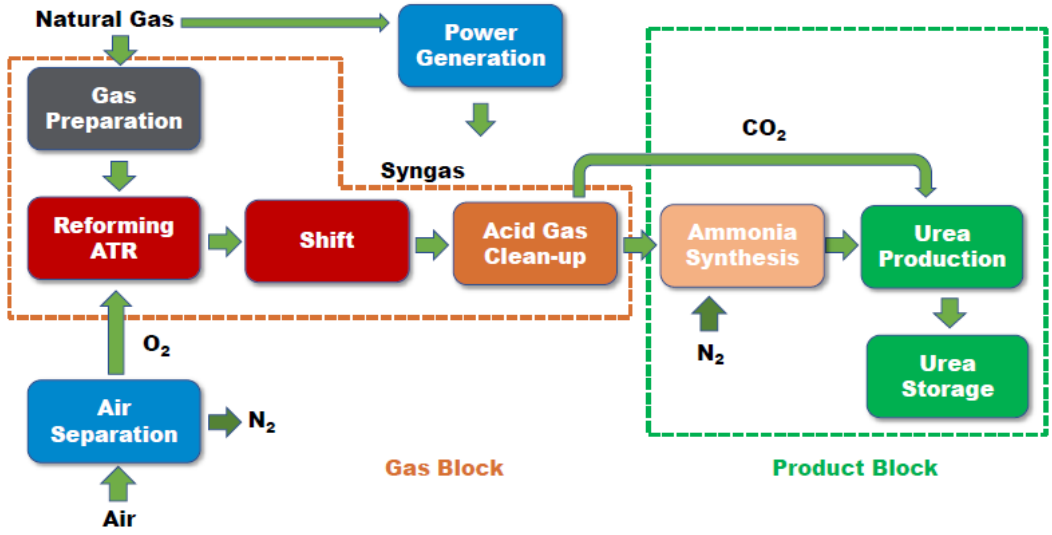

Figure 2-2 Figure 2-1: Process Block Diagram

3 Legislation, Commitments and Other Legal Obligations

3.1 Regulatory Obligations

Legislation relevant to flora and vegetation management on the Project includes, but is not limited to:

- Biodiversity Conservation Act 2016
- Biodiversity Conservation Regulations 2018
- Biosecurity and Agriculture Management Act 2007
- Biosecurity and Agriculture Management Regulations 2013
- Environmental Protection Act 1986
- Environment Protection and Biodiversity Conservation Act 1999 (Cwth)
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004
- Environmental Protection (Unauthorised Discharge) Regulations 1997

In addition to the above legislation, this management plan will be developed and regularly reviewed to comply with the commitments and legal obligations arising from the Project's environmental approvals process.

3.2 Project Approvals

The Project must comply with all of the conditions included in its granted approvals. Perdaman will be responsible for ensuring all statutory approvals required for activities or infrastructure specific to Project needs are attained in a timely manner.

Table 3-1 below includes indicative licenses and approvals potentially required for the Project, which may apply or contain conditions specifically related to fauna management. This list is provided as a guide only, and is subject to change throughout the life of the Project.

A detailed approval register will be maintained by Perdaman to monitor the implementation and progress of conditions, and the achievement, renewal and surrender of all licenses throughout the life of the Project.

Table 3-1 Project statutory approvals and agreements relevant to flora management.

Approval / Agreement	Purpose	Agency / Jurisdiction
EP Act 1986 - Part IV Approval - Ministerial Statement	EPA assessment of strategic proposal.	EPA
EP Act 1986 - Part V - Works Approval & Licence - Cat 12. Screening plant	For establishment and operation of screening plant. Managing dust emission impacts.	DWER
EP Act 1986 - Part V - Works Approval & Licence - Cat. 77 Concrete batching	For construction and operation of concrete batching. Managing dust emission impacts.	DWER

4 Flora and Vegetation

4.1 Survey and Study Findings

As part of the Project's EP Act Part IV approvals process, the owner commissioned Animal Plant Mineral Pty Ltd (APM) to undertake desktop and multi-season flora and vegetation surveys of the study area. The resulting report (CAR002 Perdaman Pre and Post-wet Season Biological Survey) forms the basis of this Flora Management Plan.

APM's assessment found that there are no proposed impacts to flora and vegetation Matters of National Environmental Significance (MNES).

4.2 Vegetation of Conservation Significance in the Project Area

Twenty-six locations in the Study Area have been classified by this assessment as the P1 Priority Ecological Community – Rockpiles of the Burrup Peninsula (Figure 4-1). These locations are not presently listed on the DBCA database. Seven vegetation associations have been classified in this assessment to be synonymous with vegetation associations listed by M. E Trudgen & Associates (2002) as being of conservation significance because they have less than 10 occurrences across the Burrup Peninsula and Angel, Gidley and Dolphin Islands. A further 4 have been included as they were listed with 10 to 24 occurrences. Impact assessment on these vegetation types will need to consider the cumulative impact of prior developments.

The EPA (2001) noted that vegetation in the King Bay – Hearson Cove Valley has high conservation value and that part of the floristic variation appears to be uncommon elsewhere on the Peninsula (Trudgen *et al*., 2001). The EPA (2001) stated that the King Bay – Hearson Cove valley appeared to be the only area on the Peninsula and islands where there is development of both an infrequently submerged littoral zone, an extensive area of samphires, and the littoral grass *Sporobolus virginicus*. It considered that more comparative information was required for the valley vegetation, and that subsequent development needed to incorporate the findings from such work into its planning. Astron Environmental (2005) mapped samphire vegetation in the valley, allowing a more detailed impact and cumulative impact assessment. Outback Ecology (2009) noted that the community mapped as Sm and described as Saline Inlet and Supra-tidal Flats by M. E. Trudgen & Associates (2002) had approximately 56% of this community's extent represented within the proposed Burrup Peninsula Conservation Reserve. Although not classified to the vegetation association level, M. E. Trudgen & Associates (2002) mapped 50 to 99 occurrences of Sm and 25 to 49 occurrences of the littoral grass *Sporobolus virginicus.*

The EPA (2001) noted that the valley is the only broad valley with gentle lower slopes and consequently had the best stands of a part of the range of vegetation structural / dominance units on the Burrup Peninsula (Trudgen, 2001). The Burrup Nitrates project along with other industrial developments in the valley have directly impacted vegetation assemblages considered significant and in general have fragmented the catena / topographic sequence on the northern side of the valley. However, the EPA recognises that the Burrup Peninsula Land Use Plan and Management Strategy (O'Brien Planning Consultants, 1996) set aside about 5,400 ha (62%) of the Burrup Peninsula for conservation, recreation and heritage protection, and that the valley has been set aside for industrial development. The EPA (2001) expects proponents to take reasonable measures to minimise impacts on the vegetation communities of highest importance as defined at a local and regional scale, having taken the available information on vegetation surveys into account when planning the footprint of their plants.

4.3 Flora of Conservation Significance

Four flora of conservation significance occur inside the Flora survey study area. Three *Terminalia supranitifolia* (P3) trees occur on rockpile vegetation in the south of the study area which are also classified as the P1 Priority Ecological Community (PEC) - Rockpiles of the Burrup Peninsula.

One specimen of *R. bungarensis* (P4) was collected from near the eastern boundary in a shallow drainage area. *T. supranitifolia* is found in other areas on the Burrup Peninsula, and other areas of the Pilbara, while *R. bungarensis* is widespread throughout the Burrup Peninsula. As such, development of the study area does not represent a significant loss of either of these species.

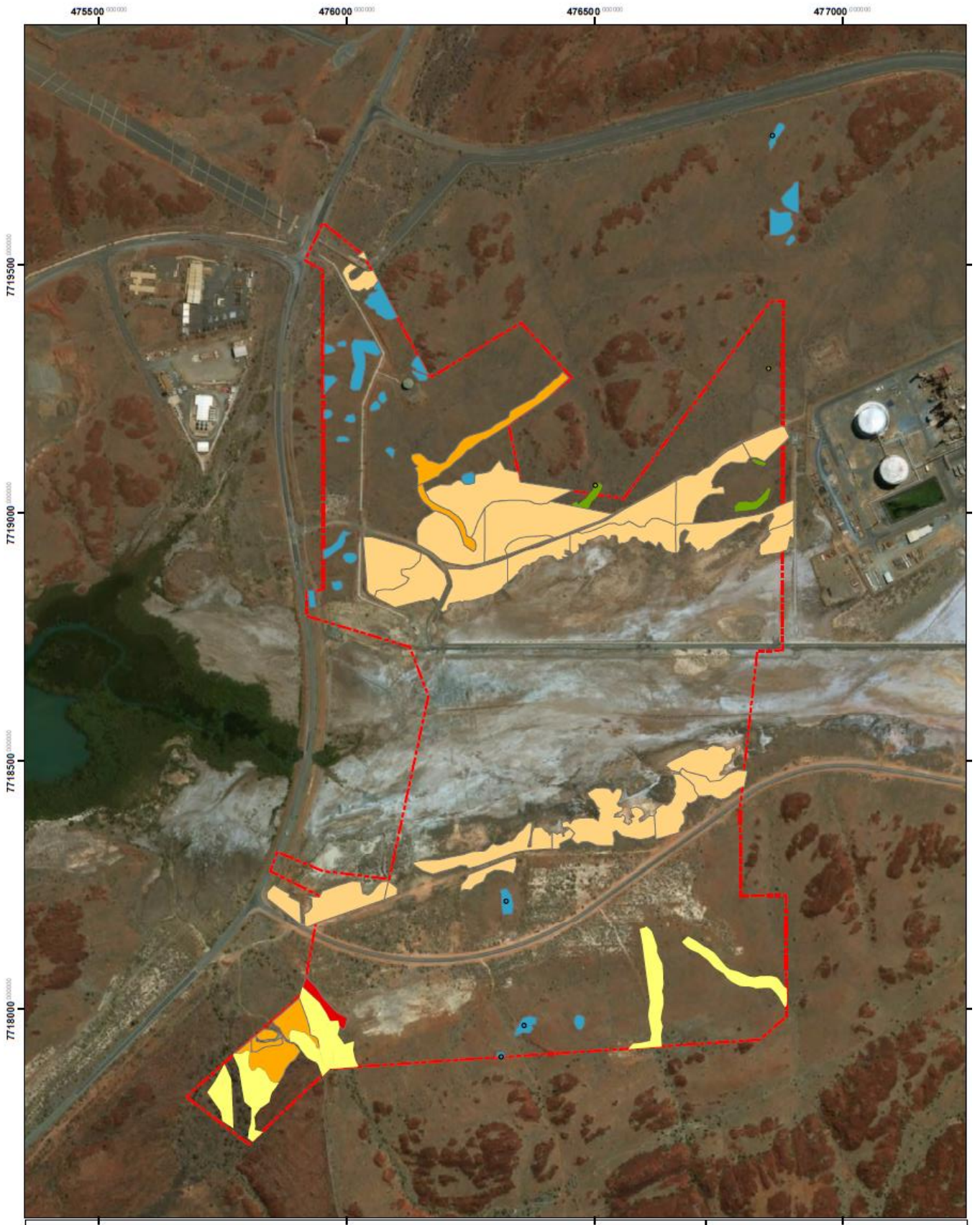

Figure 4-1: Conservation Significant Flora and Vegetation Communities of the study Area

4.4 Priority Flora

No Priority flora located during the field surveys will be impacted by the proposed layout. *Dolichandrone occidentalis* has been identified previously as being of local conservation significance as the distribution on the Burrup Peninsula is limited to one known area, despite it being widespread on the mainland. The Project area intersects with small pockets of this species; however, majority of its distribution is to the north of the study area and will not be impacted.

4.5 Priority Ecological Communities

There are 21 Priority 1 ecological community Rockpiles of the Burrup Peninsula with the vegetation community BaAcIc in the broader study area ranging in size from 0.013 ha to 0.312 ha.

BaAcIc in the study area covers 1.656 ha. Of this an area of 0.13 ha will be impacted by Project clearing. Including BaAcIc, the total cover of all Priority 1 ecological community Rockpiles of the Burrup Peninsula in the study area is 1.876 ha.

There is a large, undisturbed area of the Priority 1 ecological community Rockpiles of the Burrup Peninsula to the north and south of the study area, with a large proportion of the total area on the Burrup Peninsula occurring in reserve (National Park) areas.

As such the proposed impact is not considered to have a significant effect on the overall sustainability of this vegetation type.

4.6 Impact on Vegetation Associations

The Project area intersects a number of vegetation associations identified in Trudgen and Associates (2002) as being of regional conservation significance. The area mapped as TaTsRm (*Triodia angusta*, *Triodia epactia* grassland with *Tephrosia supina* herbland and *Rhyncosia minima lianes*) by Trudgen and Associates (2002), was recorded as a single occurrence and thus of high conservation significance. In its biological assessment APM (2019) retained the description given by Trudgen and Associates (2002) but note a much lower abundance of *Tephrosia supina* herbland and *Rhyncosia minima lianes*, likely due to the lower than average rainfall conditions. APM also noted that this area is a very narrow (15 m wide) strip of area (both in 2002 and 2019) immediately adjacent to the disturbed and rehabilitated zones to the east. In the Cluster analysis, the site was grouped with other sites based on the presence of *Triodia angusta*, and in the present study this locality is one of the furthest occurrences of *T. angusta* from the inlet.

It is considered here that the area mapped as *CcTs is synonymous with TaTsRm, albeit in poorer condition due to the presence of a weedy grass. APM (2019) mapped a greater area than Trudgen and Associates (2002) of this vegetation type. The APM (2019) biological survey study area included 0.66 ha of these combined vegetation associations. Of this 0.65 ha will be cleared as part of the Project.

There is one ChAbSg vegetation association recorded by Trudgen and Associates (2002) inside the study area, as having 2 to 4 occurrences, therefore ChAbSg (*Corymbia hamersleyana* low open woodland over *Acacia bivenosa* high open shrubland over *Dichrostachys spicata* scattered shrubs over *Stemodia grossa* low shrubland to low open heath over *Triodia epactia* hummock grassland) of conservation significance. No clearing has occurred of this vegetation from prior development. There are 4 occurrences of this vegetation remaining outside the study area. The ChAbSg vegetation is located in Site C of the Project footprint and will account for 0.89 ha of clearing.

The Project area also intersects three vegetation associations that were recorded by Trudgen and Associates (2002) as having 5 to 9 occurrences. This includes 5.67 ha of the vegetation association AbTa (*Acacia bivenosa* high open shrubs over *Triodia angusta* hummock grassland) which is within the Project clearing area. Using the combination of APM (2019) and Trudgen and Associates (2002) vegetation mapping, there is approximately 12 ha in total and there will be 11 occurrences remaining outside the Biological Survey study area. There are no occurrences of this vegetation within the Murujuga National Park.

The Project will disturb 6.22 ha of the vegetation community AbImTe (*Acacia bivenosa* high open shrubland to high shrubland over *Indigofera monophyla* scattered low shrubs to low open shrubland over *Triodia epactia* hummock grassland to closed hummock grassland). Trudgen and Associates (2002) mapped a total of 23.4 ha of this vegetation type as a single unit and a further 8.14 ha as mixed units. The area mapped by Trudgen and Associates (2002) outside of the Project area intersects other developments and 10.981 ha has already been cleared but no occurrences have been completely cleared. There will be 8 occurrences remaining post-development of the Project plus 2 more occurrences as a mixed unit.

The Project will clear 0.06 ha of the vegetation association EvAa (*Eucalyptus victrix* low woodland over *Acacia ampliceps* open heath over *Cyperus vaginatus*, *Eriachne tenuiculmis*, *Triodia angusta* sedgeland and tussock/hummock grassland). This is 2.15% of the distribution extent on the Burrup Peninsula. Cumulative impact analysis found 0.208 ha has been cleared by other developments which would total a reduction of 8.5%. There will be 8 occurrences following the proposed clearing for the Project.

The Project sites intersect ChAbSg (*Corymbia hamersleyana* low open woodland over *Acacia bivenosa* high open shrubland over *Dichrostachys spicata* scattered shrubs over *Stemodia grossa* low shrubland to low open heath over *Triodia epactia* hummock grassland) which was recorded by Trudgen and Associates (2002) as having 2 to 4 occurrences and is therefore of conservation significance. No clearing has occurred of this vegetation from prior development. The Project clearing activities will disturb 0.89 ha of ChAbSg.

The Project sites intersect two vegetation associations that were recorded by Trudgen and Associates (2002) as having 10 to 24 occurrences. Though the proposed clearing could impact up to 0.26 ha of ChImTe and 0.63 ha of EvDsTa it will not remove the entire occurrences of the vegetation type and therefore there is no change to their conservation significance as assessed through the method of Trudgen and Associates (2002).

Table 4-1 summarises the estimated clearing amounts for each of the vegetation associations identified within the Project area. Figure 4-2 and Figure 4-3 map the vegetation communities into northern and southern study areas. It should be noted that this is the total study area and not the final project footprint, nor potential clearing areas, which are both located within and smaller than the study area.

Table 4-1 Vegetation association clearing amounts within the Project area.

Vegetation	Sum of Area_ha
(Te)Sv	1.71
*Cc*AjTt	0.68
*CcTs	0.44
AbHlCwTe	0.87
AbHlTe	0.87
AbImTe	6.22
AbTa	5.67
AbTe*Cc	12.95
AiGpTe	2.96
BaAcIc	0.13
ChAbSg	0.89
ChImTe	0.26
ChTh	0.53
EvAa	0.06
EvDsTa	0.63
Hht	0.17
HhtHil	4.88
TaTsRm	0.21
TcEtSe	0.04
Te	0.48
TeAb	5.74
TeAtSd	0.09
TeCa	0.06
TeRm	1.25
TeTh	13.18
Tw	0.23

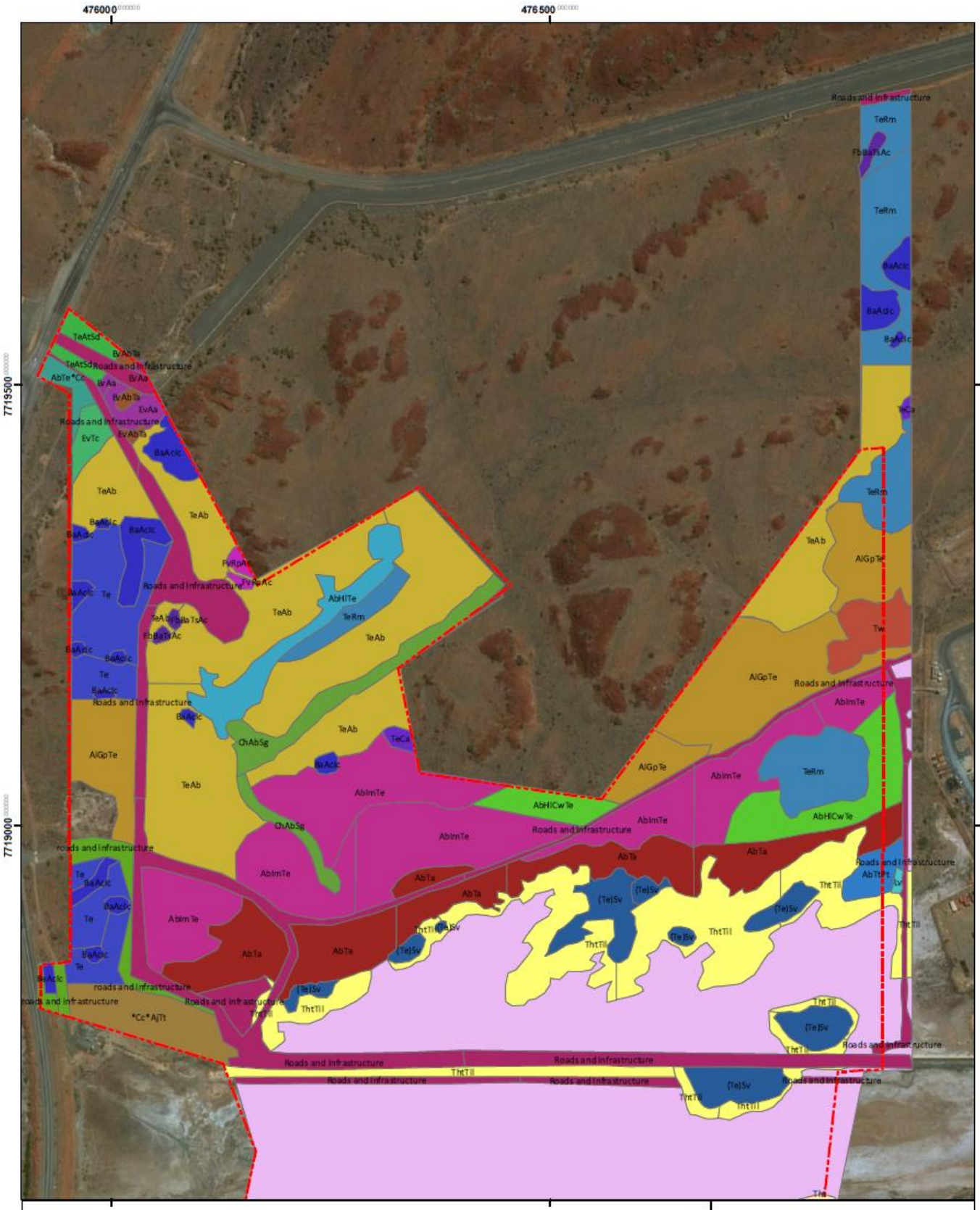

Figure 4-2: APM Vegetation Communities of the Study Area (North)

Legend

Project Area

APM 2018/2019

(Te)Sv
*Cc*AjTt
*CcTs
AbCgTe
AbHlCwTe
AbHlTe
AblmTe
AbTa
AbTe*Cc
AbTlPt
AiGpTe
BaAcIc
ChAbSg
ChAbTe
ChImTe
ChTh
Ev*CcTe
EvAa
EvAbTa
EvDsTa
EvTc
FbBaTsAc
FvRpAc
GpCwTe
Lv
Roads and Infrastructure
TaTsRm
TcEtSe
Te
TeAb
TeAtSd
TeCa
TeRm
TeTh
Tht
ThtTll
Tw
roads and infrastructure

Veg_Mudflats
Veg_Mudflats

N

90 45 0 90 Meters

1 centimeter = 40 meters
Date: 11/06/2019
Coordinate System: GDA 1994 MGA Zone 50
Author: ems@animalplantmineral.com.au

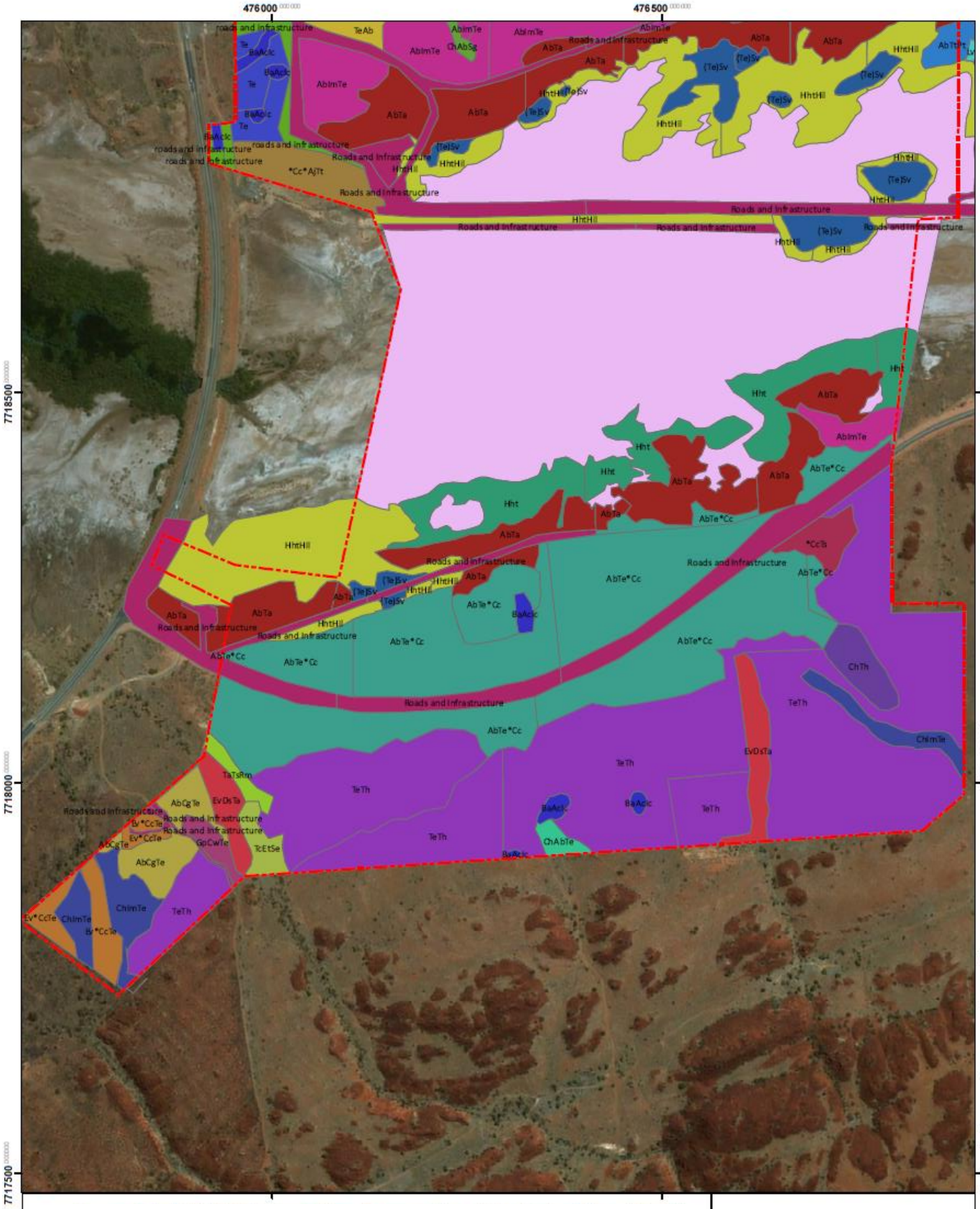

Figure 4-3: APM Vegetation Communities of the Study Area (South)

Document Path: \\MAINSERVER\Documents\APM GIS and Mapping\03_Client\APM\2018-19\GIS\CAR\02_GIS Maps\20190611_CAR002_Fig4-6 Vegetation communities south.mxd

4.7 Vegetation Condition

Vegetation ranges from Excellent condition to Completely Degraded. Vegetation condition is displayed in Figure 4-4. Areas classified as completely degraded contain roads and infrastructure and are maintained in a vegetation free state. One narrow area in the south western part of the Study Area has been classified as Degraded condition. This is a rehabilitated road that has not returned to a good cover or diversity of vegetation.

The area classified as in Poor condition in the south of the Study Area contains the vegetation association TeTh. This area is previously disturbed and rehabilitated and large shelly lens in close proximity to the surface has been exposed during the rehabilitation process which provides poor quality soil and has slowed the rehabilitation trajectory in this area. Although it has a reasonable abundance of *Triodia epactia* the cover and diversity of plants is lower than would be expected under undisturbed conditions. The time since rehabilitation indicates the area is unlikely to regain pre-disturbance structure without further intervention. There is also a presence of the aggressive weed **Cenchrus ciliaris*.

A number of areas have been designated in Good condition. These are distributed across the Study Area. The large areas to the south surrounding Hearson Cove Road are previously disturbed and rehabilitated and although there is also some poorer quality subsoils present at the surface, there is a reasonable diversity of species and a high abundance of plants in multiple strata. The introduced species **Cenchrus ciliaris* and / or **Aerva javanica* were found in these areas. Smaller areas designated Good condition are generally undisturbed or near to a disturbance (such as a road or pipeline corridor) and have significant infestations of the introduced species **Cenchrus ciliaris, *Aerva javanica* and **Passiflora foetida*.

Areas in the vegetation fringing the tidal inlet have been classified as Good Condition in part due to the presence of **Cenchrus ciliaris* and **Aerva javanica* but also due to the lower species diversity recorded there than by Astron (2005). Astron (2005) considered changes to the surface flow conditions caused by the pipeline infrastructure to be impacting the health of the vegetation in these areas, and the lower species diversity recorded by APM confirm this.

Areas designated in Very Good condition have vehicle tracks or other infrastructure nearby that are causing some level of disturbance to the continuity of the landscape but are otherwise not disturbed. All other areas are in Excellent condition and displayed no signs of disturbance.

A large amount of dust was noted on the foliage of shrubs and trees across the entire survey area during the dry season. A large number of shrubs were noted to have died in many areas across the Study Area however it is difficult to speculate on the cause of death differing from expected senescence of short-lived perennial shrub species common on the Burrup Peninsula.

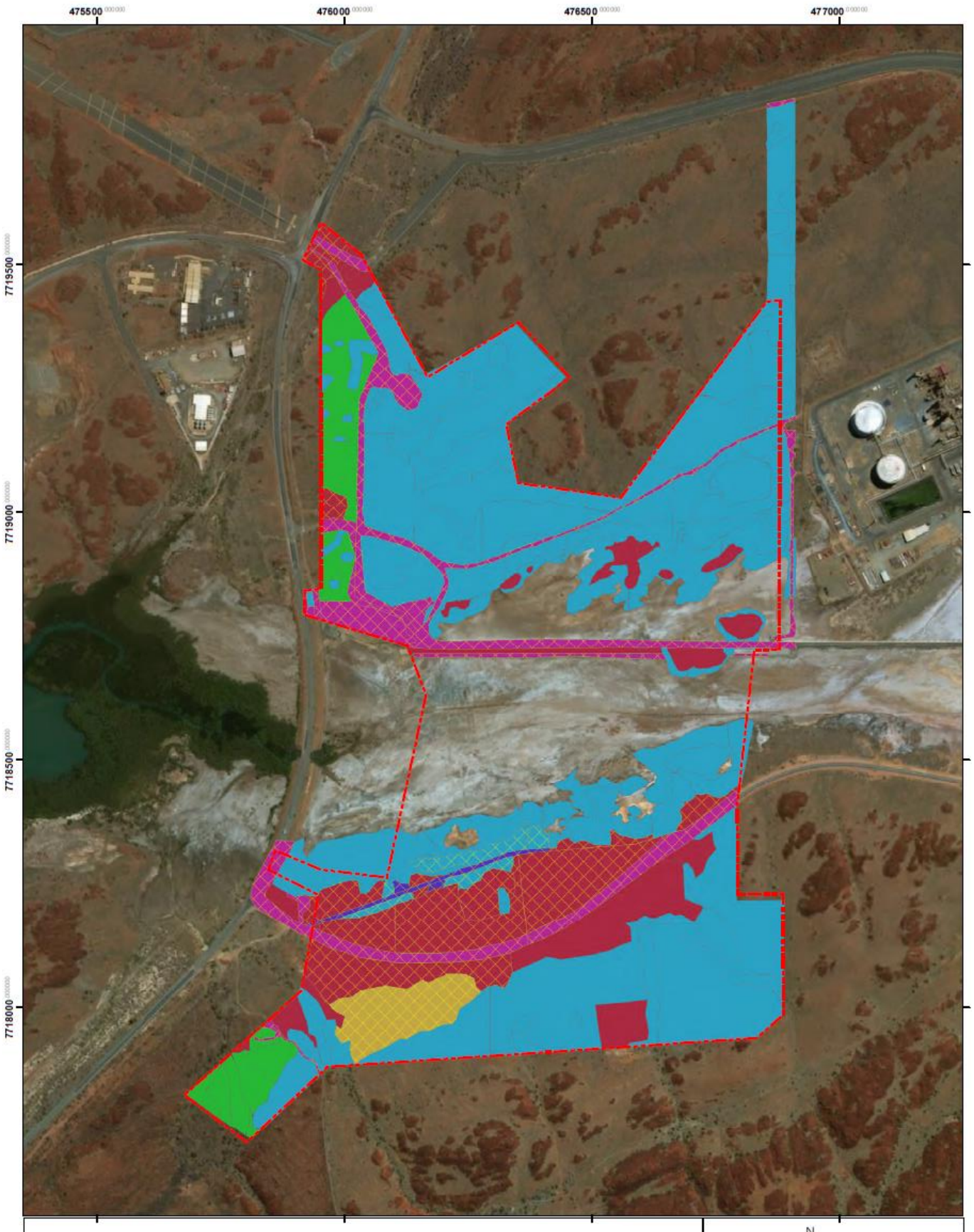

Figure 4-4: Vegetation Condition in the Study Area

4.8 Introduced Flora

Four introduced species were identified in the Project area. No declared weeds or weeds with control categories under the Biosecurity and Agriculture Management Act 2007 (BAM Act) were located in the APM study area.

- *Cenchrus ciliaris* (buffel grass) was common across the Project Area with the greatest abundances occurring in previously disturbed areas or in ephemeral creek lines under shady canopies.
- *Aerva javanica* (kapok) was recorded in high abundance in the sandy swale areas adjacent to the supra-tidal inlet and in disturbed areas, particularly near roads. In undisturbed vegetation its presence is scattered and in very low abundance. The distribution and abundance of kapok was significantly greater in the wet season follow up survey than recorded in the pre-wet season survey.
- *Passiflora foetida* var. *foetida* (stinking passionflower) has not previously been recorded on the site and is a relatively new invasion for the area. The weed is restricted to the riparian vegetation in the north west corner of the Project Area. Although the distribution is restricted, where it does occur it has a very aggressive infestation and is likely to cause significant decline to the quality of the vegetation soon if not controlled.
- *Malvastrum americanum* a naturalised herbaceous weed occurred as two individuals at one location.

The native species *Acacia ancistrocarpa* and *A. synchronicia* are common in the Pilbara but not common on the Burrup Peninsula. They were recorded as an opportunistic collection near Hearson Cove Road and are likely to have arrived in the area by transport of seed on vehicles (Trudgen & Associates, 2002).

5 Likely Impacts

5.1 Clearing of Native Vegetation

To enable the construction and operation of the Project's permanent infrastructure, native vegetation and habitat within the Project footprint will need to be removed. The construction phase of the Project will include the disturbance of approximately 69 ha, which includes native vegetation, salt plains and heavily impacted areas (roads and vehicle tracks), with a snap-back, post-rehabilitation for operational purposes, of up to 47.8 ha.

At the conclusion of the construction process areas not required for operational purposes will be rehabilitated.

Table 5-1 provides an approximate area of ground disturbance in each respective project location and the approximate area to be rehabilitated at the conclusion of the construction phase. These amounts are for total disturbance area, including native vegetation and already heavily impacted areas. A breakdown of the clearing impacting existing vegetation types is discussed in Section 4 above.

Table 5-1 Approximate ground disturbance and rehabilitation area of the Project.

Project Location	Estimated Area (ha)		
	Construction Disturbance	Rehabilitation after construction	Operational footprint
Site C	34	-	34
Site F	30 [1.]	21	9
Causeway	1.5	0.2	1.3
Conveyor	1 [2.]	-	1
Roads	2 [3.]	-	2
Port storage / shiploader	0.5	-	0.5

1. Approximately half of the Site F disturbance area was previously disturbed and used as laydown area which has since been partially rehabilitated.
2. The majority of the conveyor will be located within the EWSC which is a bituminised corridor. The area of disturbance in Table 7-1 refers to the section of conveyor, immediately to the west of Site C, prior to it connecting to the EWSC.
3. The area of disturbance for roads includes construction of new access roads to Site C. It does not include the proposed repositioning of Hearson Cove Road to its gazetted location which is to be constructed by others.

5.2 Introduction and Spread of Weeds

The introduction and spread of weeds across the Project area and into surrounding vegetation could occur as a consequence of the Project Works.

Causes include the movement of vehicles outside designated areas, the movement of weed material, weed seed contaminated topsoil and the importation of fill material.

Without suitable management, these species, particularly buffel grass, can be aggressive and have the potential to further degrade the quality of vegetation within the site and surrounding area.

5.3 Dust Deposition

During the construction phase of the Project dust generation is likely, particularly during the dry periods and earthworks.

Dust deposition on vegetation can affect transpiration and photosynthesis, which are essential processes for plant survival. Dust deposition generated during construction and operations is only likely to be an issue where such populations are located close to roadside and plant construction areas.

5.4 Changes to Surface and Groundwater Quality

Changes to the quality and quantity of surface and groundwater flow regimes have the potential to impact the condition of surrounding flora and vegetation.

Degradation of water quality from elevated levels of suspended solids or contaminants such as hydrocarbons, effluent (sewerage) and general rubbish in surface water runoff from sites C and F, entering the intra-tidal flat, could have an indirect impact on vegetation in this area and the mangrove communities of King Bay.

5.5 Altered Fire Regime

Altered fire regimes resulting from Project activities could result in increased loss or degradation of native vegetation and/ or flora due to fire impacts.

6 Management and Mitigation Measures

6.1 Management Measures

The following management measures will be implemented to manage the impact on native vegetation.

6.1.1 Ground Disturbance Permit (GDP)

A Ground Disturbance Permit (GDP) is a permit issued by Perdaman for enabling works within defined battery limits, which have the potential to impact native vegetation, fauna, heritage or other environmentally sensitive values.

The GDP provides the Project personnel responsible for managing the ground disturbing activities with a summary of the key approval commitments and obligations obtained by or issued to Perdaman by regulators, tenure holders and other third parties.

Activities covered in the GDP include but are not limited to clearing and grubbing, grading open ground, movement of plant, equipment and vehicles and any other activity which will disturb or damage soil, waterways, habitat and, or vegetation.

A GDP could be issued through a standalone process or included in an overall approval to work procedure developed for the Project.

It is the responsibility of all project Personnel to ensure they submit to Perdaman an application form requesting a GDP at least two weeks prior to requiring access to the area being the subject of the GDP.

6.1.2 Environmental Site Inductions

All Project Personnel working on the Project site will be made aware of this FMP and their responsibilities for broader environmental management via a site induction. All Contractors undertaking construction works will be provided with a copy of the FMP.

Following the induction, all persons working on site will be required to sign the induction form and a log will be kept of all staff that have completed the environmental site induction. All construction personnel will hold appropriate competencies and qualifications for their intended role.

Toolbox meetings will be conducted regularly to maintain and improve awareness of environmental and safety issues, as required. A review of the key elements of this FMP should be included as toolbox topics to reinforce its requirements and maintain compliance throughout the project.

6.1.3 No-Go Zone

Without active management and appropriate fencing, unrestricted access into areas of retained vegetation within the Project area by vehicles and machinery may result in loss of native vegetation cover, soil disturbance and compaction, and weed infestation. A suitably qualified surveyor will set out the construction battery limits and approved No-Go Zones in accordance with the endorsed plans.

No-Go Zones will be clearly demarcated on site prior to and for the duration of Works. Fencing / boundary markers shall be installed to restrict the movement of vehicles, plant and personnel into vegetation areas that are not to be impacted.

Areas of high sensitivity such as designated vegetative communities, including those bordering the Project site, will be protected with fencing to prevent entry or impact.

The following measures relating to fencing will be implemented:

- Temporary (panels) or permanent fencing will be installed prior to any clearing being undertaken in vicinity of the sensitive area;
- The requirement for fencing shall be included in the Ground Disturbance Permit (GDP) issued for those particular Works, with onsite verification by the Contractor's Environmental Representative prior to the commencement of clearing Works;
- All Project Personnel will be aware of ecologically sensitive areas to minimise the likelihood of inadvertent disturbance to areas marked for retention;

- No Works are to take place within No-Go Zone and fences are not to be moved during the entire construction period and will not be removed until all Works have been completed.

Areas including the Project's battery limits shall be demarcated with fending or boundary markers.

The following measures relating to boundary markers will be implemented:

- The boundary markers will consist of PVC pipe inserted over star pickets driven into the ground marking the edge of the boundary. The PVC pipe will be approximately 2m in length and marked with two blue painted stripes at the top end;
- The correct location of boundary markers is to be confirmed onsite by a suitably qualified surveyor;
- The requirement for boundary markers shall be included in the Ground Disturbance Permit (GDP) issued for those particular Works, with onsite verification by the Contractor's Environmental Representative prior to the commencement of clearing Works.

Temporary signage will be installed along the perimeters of the No-Go Zone at regular intervals (i.e. 30m apart). All signage will be maintained until construction Works are complete or until replaced by permanent fencing.

Signage will be installed in order to:

- Highlight the area as an ecologically sensitive area;
- Prevent accidental entry by construction personnel;
- Prevent vegetation trampling, rock disturbance and rubbish ingress by construction workers during the construction phase.

Temporary fences and signs are to be checked on a weekly basis as part of routine site inspections to ensure they remain in place and effective. Any identified damage to temporary fences is to be repaired immediately upon discovery.

6.2 Protecting P1 Priority Ecological Community

The Project's footprint includes PEC P1 Burrup Peninsula Rock Pile Communities located in Site C, Site F and within the proposed conveyor route in the northwest portion of the site (Attachment A).

A No-Go Zone is to be established around the PEC P1 areas in Site F as delineated by APM (Figure 6-1). This is to be established prior to the start of any site clearing and maintained throughout the duration of the Project Works. The No-Go Zone is to include a buffer of at least 10m from the edge of the delineated shapefile prepared by APM as part of their 2019 site survey (APM Shapefile). The northern PEC P1 community in Site F is also part of a listed heritage area which may require a different No-Go Zone buffer. It is Perdaman's responsibility to ensure the greater buffer zone distance of the two protected areas is applied.

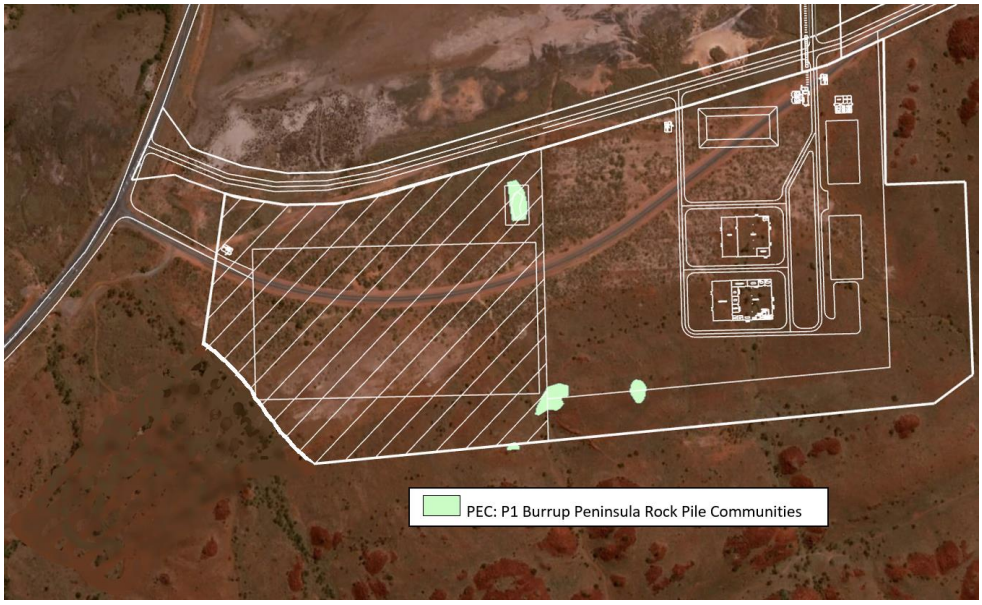

Figure 6-1 Site F Priority Ecological Communities

PEC P1 communities located wholly or partially within the conveyor corridor should not be disturbed. Wherever practicable, these areas are to be managed as No-Go Zones to the extent of the APM Shapefile.

The PEC P1 communities located adjacent to Site C's ammonia storage tank and the intersection of Burrup Road should, as far as practicable, not be disturbed to the extent of the APM Shapefile (Figure 6-2). As both of these areas sit within significant components of the project footprint, disturbance may be unavoidable.

Figure 6-2 Site C and Conveyor Corridor Priority Ecological Communities

6.3 Managing Weeds and Introduced Flora

Weeds are to be managed and controlled in accordance with CW10556000-EN-PL-003 Weed Management Plan.

6.4 Fire Management

Fire is to be managed as per the requirements of CW1055600-EN-PL-004 Emergency Response Management Plan and CW1055600-EN-PL-001 Environmental Management Plan.

6.5 Summary of Mitigation Measures

The clearing of native vegetation will, wherever practicable, be kept to a minimum and only be undertaken in areas approved through regulatory approvals. Table 6-1 details the mitigation measures the Project will apply to manage the potential impacts to flora and vegetation against each of the Project's relevant potential impacts.

Table 6-1 Summary of vegetation clearing measures.

Potential Impacts	Mitigation Measures
EPA Objective: To protect flora and vegetation so that biological diversity and ecological integrity is maintained	
Loss of Vegetation and Flora as a Result of Clearing Clearing of native vegetation, including: • P1 PEC Burrup Peninsula rock pile communities: Pockets of vegetation in rock piles, rock pockets and outcrops. Clearing of conservation significant flora: • Up to 1 individual of *Terminalia supranitifolia* (P3); and • Up to 1 individual of *Rhynchosia bungarensis* (P4).	**Avoid:** The original processing facility layout was forecast to impact 21.3 ha of tidal flats and Samphire Shrubland/Saltplains vegetation. Following design optimization, proposed clearing of this vegetation association has been significantly reduced. This includes avoiding the requirement to clear the majority of area between sites C and F, to just that area required for construction of the causeway (1.5 ha). The Project has been designed to avoid PECs and conservation significant flora to the fullest extent practicable. The extent of PECs and the presence of Priority flora will be identified and demarcated by an Environmental Representative and avoided where possible. These extents will be used to form boundaries of clearing areas as 'exclusion zones'. A suitably qualified Environmental Representative will also be present during clearing within or near PECs to guide operators and ensure clearing outside of boundaries does not occur. The location and identification of *Terminalia supranitifolia* (P3) and *Rhynchosia bungarensis* (P4) to be retained will be clearly communicated to construction personnel prior to construction activity to avoid accidental disturbance and/or clearance to this species. High quality vegetation located on the northern margins of Murujuga National Park (southern perimeter of Site F) has been avoided by selecting the northern Hearson Cove Road re-alignment option. **Minimise:** Develop and implement a Ground Disturbance Permit (GDP). Ground disturbance and clearing of vegetation will be kept to a minimum necessary for safe and efficient construction and operation. Topsoil and vegetation will be stripped and stockpiled for use in rehabilitation prior to commencement of construction works. Sites for stockpiling vegetation and topsoil and vegetation are to be clearly defined prior to clearing. Land clearing will be undertaken progressively and incrementally during construction, in order to minimise the pressure on the carrying capacity of native vegetation surrounding the site. Plan clearing to retain vegetation where possible, such as around carparks and infrastructure, and landscaped areas. Agreed and approved clearing limits will be marked clearly on construction design plans and pegged in the field prior to any clearing taken place. Areas outside the construction footprint will be protected by temporary fencing and/or flagging. Vegetation will be progressively cleared to prevent soil erosion, dust generation and weed introduction/ colonisation. Local provenance seeds will be collected prior to native vegetation clearing. Where required, native seeds will be collected within a 20 km radius of the Project Area to help supplement seed supplies. Seeds will be stored to promote longevity of the seeds and ensure viability upon rehabilitation. Seeds for use in rehabilitation will be allocated to precise areas and will be marked. Vegetation will be visually monitored to assess any reduction in vegetation health.

Potential Impacts	Mitigation Measures
	Rehabilitate: Cleared areas will be progressively rehabilitated where they are no longer required for Project activities. Local provenance seed will be used in rehabilitation activities in order to facilitate preservation of local genetic diversity within the re-established vegetation. Top soil will be stockpiled and re-spread over disturbed areas to maximize germination of pioneer species from the soil seedbank.
Degradation of Vegetation as a Result of Ingress of Weeds Clearing and/ or movement of vehicles containing weed seeds throughout Project Area could result in increased weed abundance.	**Avoid** Any imported fill material / soil will be obtained from weed free sources to prevent further spread of weeds. Prior the importation of any fill material to the Project site, a written verification from the supplier will be obtain certifying that the material is weed free and meets the criteria of clean fill as defined in the DWER Landfill Waste Classification and Waste Definition 1996 (as amended 2018). **Minimise** To prevent the spread and/or distribution of weeds within the Project Area and to surrounding areas a Weed Management Plan will be prepared prior to the commencement of construction. This plan will outline weed hygiene and management procedures to be undertaken during construction and operations, particularly in referring to controlling the spread of *Cenchrus ciliaris* (Buffel Grass). Active management of edge effects will be employed which may involve weeding to ensure no creep of disturbance responsive weed species into remaining vegetation. Appropriate eradication of problematic species will be employed within construction and operation areas, so that weed control measures do not adversely affect adjacent native vegetation. Clean entry procedures will be enforced for all vehicles, equipment and personnel entering the Project past public carparks. Vehicles will be required to go through a site entry check and wash down. All employees and contractors will be inducted and trained in wash down procedures. All vehicles and equipment are restricted to designated roads and other paved areas to prevent excessive disturbance and dispersal of weed species. Ongoing weed monitoring will occur within the project site and along the site boundary for new infestations during and following construction activities. Weed risk areas will be identified on weed maps and through the Ground Disturbance Permit (GDP) process and shall be treated as avoidance sites wherever possible.
Dust deposition During the construction phase of the Project dust generation is likely, particularly during the dry periods and earthworks.	**Minimise** A Dust Management Procedure shall be developed and submitted to and approved by the Environment and Heritage Manager prior to commencing Works likely to generate dust emissions. Dust suppression techniques (e.g. water trucks) shall be used on unsealed roads and access tracks, cleared areas and at locations of high dust risk. Dust suppression measures shall be implemented where dust is visible, except during topsoil stripping. Saline water (> 5000 mg/L TDS) shall not be used for dust suppression unless approved by the Environment and Heritage Manager. Where the use of saline water for dust suppression (> 5000 mg/L TDS) is approved, dribble bars shall be used to control overspray onto adjacent vegetation.

Potential Impacts	Mitigation Measures
	A log of water used for dust suppression will be maintained and reported in the Monthly Environmental Report. Information reported will include, where relevant, the source of the water (eg: bore reference number or standpipe reference), date and time, volume removed (including meter reading at start and finish), location where water was used. Vegetation clearing and exposed surfaces shall be kept to a minimum wherever practicable. Vehicle speeds on access tracks and around work sites shall be reduced where necessary to minimise dust emissions. Vehicles shall remain within designated roads and park only in allocated areas. Dust suppressant additives or methods that reduce overall water consumption should be used wherever practicable. This shall include restricting traffic within cleared areas until access is needed. Vegetation clearing, grubbing and earthworks during high winds (>40 km/hr) should be avoided. Where these works are required to be conducted during high winds, additional management measures must be implemented to minimise and control dust emissions. Where community complaints are received regarding dust emissions Perdaman may install dust monitors. Dust emissions from the conveyor, product storage sheds and shiploading operations will be monitored and minimised throughout the life of the Project. Should emissions exceed the Project's approval conditions, corrective actions must be implemented, as soon as practicable, to reduce emissions to the permitted level.
Changes to surface and groundwater quality Changes to the quality and quantity of surface and groundwater flow regimes have the potential to impact the condition of surrounding flora and vegetation.	**Avoid** The design scope for the fully enclosed conveying and ship loading system eliminates of the risk of loss of urea product as fugitive dust emissions or spills with the consequential loss of valuable product and potential environment impacts of degradation of water quality in the terrestrial environment. **Minimise** ***During Construction*** ***Drainage, Erosion and Sediment Pollution Controls*** The following controls shall be installed prior to commencement of construction to prevent contamination of surface water and receiving environments. *Drainage Controls* ▪ Existing drainage lines will be protected and any diversion of these lines should be kept to a minimum. ▪ Flow management across the site will prevent the concentration and diversion of waters onto steep or erosion prone slopes. ▪ Any diversion of drainage lines will be directed to slopes that are not prone to erosion. ▪ External water flows entering the Project's battery limits will be diverted around the construction footprint, using drainage structures such as catch drains and bunds. ▪ Temporary drainage structures will be designed to reduce run-off velocities by using wider inverts, flat bottomed drains rather than V-shaped drains, check dams (or similar), silt fencing and revegetation of completed areas. ▪ All drainage lines likely to receive run-off from disturbed areas, such as those downstream of worksites, will be fitted with geotextile silt fences. Rock checks should also be used in drains to slow flows and provide a lining to prevent scouring of underlying surfaces. Sediment basins will be added to drainage lines as necessary. Basins shall be designed relative to the catchment and likely flow levels for higher rainfall events.

Potential Impacts	Mitigation Measures
	▪ Where silt fences are installed for sediment control, they must be constructed with a centre section lower than the ground levels at the end of the silt fence to avoid outflanking during heavy rainfall events. ▪ Silt and sediment fences shall be maintained until the areas above them have been adequately stabilised to minimise the erosion risk such that the controls can be removed. ▪ All stormwater proposed for discharge will first be contained in an appropriately lined sediment basin, to all sediment to settle out. ▪ Construction activities will be scheduled to avoid periods of heavy rainfall, strong winds or peak water flow. *Erosion and Sediment Pollution Controls* Sediment controls are designed to prevent the transportation of sediment and other pollutants from worksites to waterways. They will be installed across the Project sites in areas where land is disturbed. In order to minimise the land exposure and potential risk of erosion, all land disturbances should be confined to a minimum practical working area and within the vicinity of the identified work areas. Where possible, existing vegetation surrounding the construction site will be used as a buffer zone to help filter surface runoff and should not be disturbed unless necessary for the purpose of construction. To ensure that silt from batters, cut-off drains, table drains and road works is retained on site and replaced as soon as practicable, sediment controls will be installed downstream of any disturbed land such as worksites, prior to that work being undertaken. Run-off controls will be developed and maintained to the following standards: ▪ Controls will be designed to take predicted flows, based on 140436-000-41EG-0001 Standard Specification Geographic, Climatic and Wind / Seismic Data. ▪ Exposed ground will have control measures that minimise the level of erosion. ▪ Drains will be installed across the site to divert clean surface water to stable areas and away from parts of the site where soil is exposed. ▪ Installation of sediment traps and basins with a riser pipe or flexible pipe and spillway to avoid adverse flood risk to adjoining properties. These systems shall allow for the gradual discharge of the clearest water during a storm event as detailed in 6.1.3. ▪ Geotextile silt fences shall be installed in surface water flow areas to minimise the sediment discharge from the site (refer to Attachment C). ▪ Should hay bales be used for sediment control, they will be made of straw sourced from cereal crops and be free of weed seeds. ▪ If any areas of localised erosion develop, they will be remediated as soon as practicable to prevent further erosion or sediment deposition in offsite areas. ▪ Regularly inspect stormwater drainage and sediment control structures to ensure hydraulic integrity and erosion and pollution control effectiveness. If the control structures are obstructed or have their capacity reduced by 30% or more through the accumulation of silt, litter, vegetation and other debris, they shall be cleared, with silt returned to a stabilised part of the project. ▪ Sediment control structures at waterway crossings will be developed during the detailed design process before any such work takes place.

Potential Impacts	Mitigation Measures
	▪ Throughout construction, rehabilitation of disturbed areas will be progressively undertaken, or as soon as practicable, following completion of specific works. ***Post- Construction*** The following principals shall be applied: ▪ The granular urea product is much harder than prilled urea, therefore creating less fines and dust when handled and transported which minimizes the urea fines and dust that could be accidentally released during conveying and ship loading activities. ▪ Spill contingency and emergency response plans and procedures will be developed and implemented to address environmental risks and potential impacts specifically related to the operational phase ▪ The stormwater pond includes an oil skimmer for removal of oil traces. These are sent to the oily water collection pit/processing. ▪ For paved areas of the urea processing plant, there will be stormwater collection pits (epoxy coated concrete pit) where the first 15mm of stormwater can be collected. Stormwater collected will be treated by steam stripping or other means to bring ammonia (Total Kjeldahl Nitrogen) in water within limit, prior to reuse within the process plant. ***Ongoing Monitoring*** Regular inspections and audits will be undertaken to ensure the environmental protection outcomes of the Project are achieved. Inspection and maintenance activities will follow the Monitoring and Compliance requirements outlined in the Project Environmental Management Plan (PEMP) and will include: ▪ Review of Erosion and Sediment Control Plans and validate that the proposed erosion and sediment controls have been implemented and, where relevant, revised to accommodate the changing environment. ▪ Inspections to observe and record any scouring, erosion and sediment transfer particularly beyond the Project footprint. ▪ Cleaning of sedimentation basins when the accumulated sediment has reduced the basin capacity by more than 30%, as indicated by depth pegs. ▪ Cleaning of all drains to remove silt, vegetation (where capacity is reduced) and litter. ▪ Weekly inspection of access roads and hardstand areas to identify erosion damage in need of maintenance. Remediation is to occur within one month or earlier if heavy rains are likely. ▪ Discharge from any oily water separator shall be monitored to ensure it contains less than 5ppm Total Recoverable Hydrocarbons (TRH) and is in compliance with Project approval conditions before it can be used for dust suppression or discharged into the environment. Written approval from the Contractor's Environment Manager must be obtained prior to reuse or discharge to the environment. Contingency measures include: ▪ Where erosion or sediment deposition occurs, rehabilitation corrective actions shall be implemented as soon as practicable. ▪ Where sedimentation occurs the source of the sediment should be determined to identify likely erosion in up gradient areas. The sediment should be removed and deposited, if possible as part of erosion controls. ▪ Where erosion is identified and requires rehabilitation the impacted area shall be filled, compacted and contoured to merge with the surrounding landscape.
Loss of Vegetation and/or Flora from Fire	**Minimise**

Potential Impacts	Mitigation Measures
Altered fire regimes resulting from Project activities could result in increased loss of native vegetation and/ or flora due to fire impacts.	Manage fire to reduce frequency and intensity around the Project area and the local area. Staff will be trained in the use of fire extinguishers. Spot fire control measures will be devised. All vehicles will be fitted with fire extinguishers. A Hot Work Permit system will be devised and implemented. Cigarette disposal units will be designated in approved smoking areas on site. Employees will not be permitted to smoke in vehicles within the Project Area. Vehicles will be required to remain on established tracks and roads only and will be instructed in avoiding leaving vehicles idling over vegetation, regrowth or dry grass, in the summer months.

7 Monitoring and Reporting

Perdaman shall conduct regular inspections and audits of the Project's work sites and undertake monitoring of specific environmental aspects and impacts.

7.1 Environmental Inspections

Perdaman shall undertake weekly environmental inspections of all Project work areas and activities of their Project personnel, including those that potentially impact native vegetation. This includes relevant aspects such as:

- Hazardous materials storage and handling;
- Dust and other emissions management;
- Refuelling activities;
- Land clearing and rehabilitation;
- Groundwater usage;
- Stormwater management including sediment basins and ponds;
- Spills, leaks and contaminated ground;
- Topsoil management;
- Liquid Waste management (liquid and solid); and
- Environmental incidents and corrective action close out;

7.2 Environmental Audits

Perdaman shall conduct environmental audits of individual construction work packages and operational areas via an integrated audit schedule. This will be undertaken to ensure all Project activities and environmental management processes conform with the planned arrangements and whether the PEMP has been properly implemented. The key requirements to be reviewed may include:

- Performance against licensing and approvals conditions, project targets, objectives and policy statements;
- Adequacy of resources and training;
- Complaints and non-conformance management.

The audit schedule will be developed in consultation with relevant Project Personnel. Results of all audits will be communicated and discussed at management review meetings.

7.3 Compliance

The requirements stated in this document are considered a minimum standard and compliance is mandatory.

The aforementioned audit, inspection and monitoring regime conducted by Perdaman will monitor compliance with these requirements.

The Project's suite of licenses and approvals will contain conditions that must be satisfied prior to the commencement and throughout Project construction, commissioning and operation. Non-compliance with these conditions could result in fines and penalties being levied against individuals and companies.

Perdaman shall maintain a legal obligation register and implement systems to monitor and ensure compliance with these requirements.

7.4 Environmental Reporting

Perdaman is responsible for the preparation of overall Project related environmental reports including compiling data from monitoring programs.

Perdaman will compile monitoring data and relevant environmental information on a monthly basis. This will include relevant native vegetation and ground disturbance information such as:

- Shapefiles of clearing footprints;
- Compliance with GDP conditions;
- Update of Project clearing budgets;
- Topsoil stockpile compliance;
- Dust monitoring results and non-compliances; and
- Rehabilitation outcomes.

Reporting to external stakeholders and regulators will be in strict accordance with the Project's approval conditions.

8 Definitions

Contractor

The Contractor on the Project is any individual or party engaged directly or indirectly by Perdaman, that is not an employee of Perdaman, to carry out the Project.

Environmental Representative

The Environmental Representative includes Perdaman's Environment and Heritage Manager, the Environmental Coordinator or their delegated representative.

Environment and Heritage Manager

The Environment and Heritage Manager is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance and effectiveness of the Project's environmental and heritage requirements.

Ground Disturbance Permit

A Ground Disturbance Permit (GDP) is a permit issued to a Subcontractor, by the Contractor, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the Contractor or Owner by regulators, tenure holders and other third parties.

May

Indicates that the Subcontractor is permitted to do something or the Contractor reserves the right to do something according to the text.

Perdaman

Perdaman Chemicals and Fertilisers Pty Ltd is the proponent of the Project.

Project Personnel

Project Personnel includes all persons working on the Project directly employed by Perdaman, or its Contractors.

Project Work Sites

The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor to the Port and the Port storage and loading infrastructure. It can also include any other Project relevant location under operational control of Perdaman.

No-Go Zones

No-Go Zones are defined areas within the Project's footprint which are not be entered and or disturbed by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.

Shall

Indicates that a statement is mandatory.

Should

Indicates a recommendation.

Weed

A weed is a plant that is regarded as not endemic and considered undesirable in a particular location or region.

Works

Works includes all work which SNC-Lavalin and or its Subcontractors are required to perform to comply with its obligations under the Contract.

9 Abbreviations

Abbreviation	Description
APM	Animal Plant Mineral Pty Ltd
DBCA	Department of Biodiversity Conservation and Attractions
EPC	Engineering, Procurement and Construction
EPBC	Environmental Protection and Biodiversity Conservation Act 1999
ERD	Environmental Review Document
FaMP	Fauna Management Plan
FEED	Front End Engineering and Design
FID	Final Investment Decision
FMP	Flora Management Plan
GDP	Ground Disturbance Permit
Mtpa	Million tonnes per annum
MNES	Matters of national environmental Significance
PEC	Priority Ecological Community
PEMP	Project Environmental Management Plan

10 Reference Documents

Document Number	Document Title
140436-000-30PL-0002	Construction Environmental Management Plan
140436-000-4EPL-0001	Weed Management Plan
140436-000-39GA-0001	Monthly Reporting Calendar
APM (2019)	Perdaman Urea Project and Post-Wet Season Biological Survey
CAR002_FMP_v01	APM Perdaman Urea Project Flora Management Plan
Trudgen and Associates (2002)	A flora, vegetation and floristic survey of the Burrup Peninsula, some adjoining areas and part of the Dampier Archipelago, with comparisons to the floristics of areas on the adjoining mainland Volume 1.

11 Codes and Standards

Document Number	Document Title

12 Project Delivery Applicability

☐	Proposals	☒	EPC	☒	Construction
☐	Studies	☒	Project Management	☒	Commissioning
☐	Preliminary Engineering	☐	Technical Services	☐	Site Services
☐	FEED	☐	Procurement	☒	Ops and Maintenance
☒	Detailed Design	☒	Construction Management		

Attachment A. Pre and Post-wet Season Biological Survey

Refer to Environmental Review Document Appendix B